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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,108	01/22/2001	Aloys Huttermann	3395 4PUS	4089

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EXAMINER

SAYALA, CHHAYA D

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 08/13/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/647,108

Applicant(s)

HUTTERMANN ET AL.

Examin r

C. SAYALA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/03 has been entered.

Specification

1. The substitute specification filed 6/25/03 has not been entered because it does not conform to 37 CFR 1.125(b) because: the statement as to a lack of new matter under 37 CFR 1.125(b) is missing.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 2-11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vyshkina (US Patent 5967965) in view of EP 0072214 and EP 0072213 and further in view of Torres et al. (Soil use and management, vol. 14(2), pages 106-110, 1998), Nille (US Patent 4755205) and Mayfield (US Patent 5501073).

Vyshkina '965 teaches a process for removing heavy metals, particularly chromium, from soils with an anionic flocculant. Column 5, lines 13-15 shows that at a chromium concentration of up to 100 ppm, a single wash with a solution of anionic

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synthetic organic flocculant is sufficient to decontaminate the soil. Example 1 discloses the use of high molecular weight polyacrylamide as the anionic flocculant. Vyshkina '965 does not explicitly disclose that the polyacrylamide is crosslinked, nor the process for making the polyacrylamide used in the invention, but it does disclose that polyacrylamide "or a copolymer thereof" can be used as the anionic synthetic organic flocculant. The patent does not teach treating contaminated soils where plants are grown.

However, EP 0072213 teaches crosslinking polyacrylamide to increase its solubility. The patent teaches polymers and copolymers of acrylic acid, acrylamide, acrylic acid salts, etc i.e. polyacrylates (see page 6, line 5). Additionally and importantly, the patent teaches at page 6, lines 11-12 that any monomer can contain non-sterically-hindering substituents, eg. Methyl. See also line 30. EP 0072214 teaches a process for making crosslinked polyacrylamide starting on page 2, line 23. A copolymer of acrylamide and acrylic acid salt is crosslinked. It is disclosed that substituted acrylic acid salts such as methacrylates can also be used (see page 2, lines 32-33). Crosslinking agents are similar to those disclosed in the instant claims (see page 4, lines 9-10). Heating during polymerization is taught from 90 to 150 °C (see page 4, lines 28-29). Page 3, lines 9-11 disclose the product of invention is capable of absorbing often 25 and possibly more than 100 times their own weight in water. Ranges of 0.01% to 2% crosslinking agent by total weight of the monomers are disclosed on page 4, lines 1-5. EP 0072214 also teaches partly neutralizing a monomer by an alkali before polymerization, e.g. at 90% (see page 5, lines 17-20). On page 8,

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lines 1-7, the polyacrylamide may be added as low as 0.5%-1% by weight of soil to see good results, whereas a few percent are generally required, but not more than 4%.

Both EP patents thus, not only teach crosslinking polyacrylamide and obtaining "copolymers thereof" (see '975), including methacrylates and polyacrylates, but they also teach that such high polymers are excellent plant growing media additives, giving an additional motivation to one of ordinary skill in the art to use the EP patents in place of polyacrylamide in '975.

Torres et al. disclose that soil contaminated with copper, another heavy metal disclosed by '965, can be remediated, by using a polyacrylate polymer, by the polymer chelating copper. It would have been obvious to one of ordinary skill in the art that any polymer, having anionic flocculant characteristics, as taught by '965, and having the chelating 'acrylate' or 'acrylic' group can be reasonably expected to have the ability to chelate heavy metals, and therefore, decontaminate soils of their heavy metals, regardless of whether plants are grown in that soil or not. Torres et al. teaches trapping the copper with the polyacrylate polymer in a soil where rye grass was grown.

Furthermore, prior art, such as Nille, at lines 23+ at col. 3, and Mayfield at col. 3, lines 64+ and col. 4, lines 50-55, teach that the remediation of soils, contaminated with heavy metals, in which plants/trees/forests are already grown, so that they can be restored, was already known in the art. It would have been obvious to one of ordinary skill in the art at the time invention was made to decontaminate the soil in which plants are already grown with any polymer such as polyacrylamide (Vyshkina et al., '965), polyacrylate (Torres et al.) or copolymers thereof (EP Patents '213 and '214), which include

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polymethacrylates, with the reasonable expectation that the chelating agents all contain the 'acrylate' group, as taught by '965 and Torres et al., to remove the heavy metals.

Response to Arguments

Applicant's arguments filed on 6/23/03 in paper no. 13 have been fully considered but they are not persuasive.

Applicant argues that the reference washing the soil with a polyacrylamide at a certain pH does not meet applicant's claim limitation "applying to the contaminated soil....a compound selected from the group consisting of....". This argument is not wholly comprehensible. For instance, the rejection is under 35 USC 103 and not 35 USC 102, so that there is no requirement for a claim to be "met". Next, the reference teaches polyacrylamide "or a copolymer thereof" which would suggest and include polyacrylate or polymethacrylate, obtained by crosslinking polyacrylamide, already known in the art. The references suggest that it is the chelant 'acrylate' that binds the heavy metal and decontaminates the soil, rendering obvious any polymer or copolymer that has an acrylate group. Third, there is no indication that the instant application applies the polymer to a soil that is neutral in pH. Soils are known to be either basic or acidic. The instant claims do not exclude the possibility that the soil has a pH that is not neutral. Chelation occurs at various pHs ranges, and further depends on the metal being chelated itself, and neither the patents nor the claims herein exclude the use of such pH conditions. Applicant next argues that there is no motivation to combine the EP patents with Vyshkina et al. The rejection has been re-drafted to show that there is

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motivation present to make such a combination. Additionally the reference of Torres et al teaches that polyacrylates have been found beneficial in the same way for the same endeavour, i.e. decontamination of soil. Lastly, applicant argues that the soil decontaminated is where plants were grown, and that Vyshkina et al. do not teach plants grown in the decontaminated soil. It is well established that one of ordinary skill in the art is held accountable not only for the specific teachings of references, but also for the inferences which those skilled in the art may reasonably be expected to draw. In re Hoeschele, 160 USPQ 809, 811, (CCPA 1969). Furthermore applicant has unduly limited his view of all that each reference would have fairly suggested to a person having ordinary skill in this art. Under 35 USC 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests. In re Burckel, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979). The references applied that it was known in the art to apply decontaminates to soil where trees and plants were grown to regenerate them. Further, there is no evidence presented by applicant as to why one of ordinary skill in the art would not reasonably expect that when chelation of heavy metals with polyacrylates occurs in soil, it would be the same in soil where trees/plants are grown. After all, the same chelation would occur so long as the chelant and metal are present.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. SAYALA at Group 1761, telephone number (703) 308-3035.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is 703-308-0661.



C. SAYALA
Primary Examiner
Group 1700.